

ZRIBNYAK, M.; DUMAY, M. ^{F.} kand. sel'skokhoyaystvennykh nauk

Over-all mechanisation of corn cultivation. MTS 18 no.8:18 Ag '58.
(MIRA 11:9)

1. Zamestitel' nachal'nika Khar'kovskogo oblastnogo upravleniya sel'skogo khozyaystva (for Zribnyak).
(Corn (Maize)) (Agricultural machinery)

Dunay, N. F.

GIDDEL'FARB, Ye. I.; DUNAY, N. F.; SLYUSARENKO, I. P.

Mechanization in beet seed production. Sakh. prom. 32 no. 3: 57-60
Mr '58. (NIRA 11:4)

1. Khar'kovskiy sakhsokletrest.
(Sugar beets) (Agricultural machinery)

GIMMEL'FARB, Ye.I.; DUNAY, N.F.; SLYUSARENKO, I.P.

New machine for cleaning best seeds. Sakh. prom. 32 no.5:63-69
My '58. (MIRA 11:6)

1. Khar'kovskiy sakhavoklotrest.
(Seeds--Cleaning)

KOMARISTOV, V.Ye., kand. tekhn. nauk, dots.; AVTUKHOV, I.V.,
kand. tekhn. nauk, dots.; DUNAY, N.F., kand. sel'khoz.
nauk, dots.; KHRAPACH, Ye.I., kand. tekhn. nauk;
PESTRYAKOV, A.I., red.

[Agricultural machines and implements] Sel'skokhoziai-
stvennye mashiny i orudiia. [By] V.E.Komaristov i dr.
Moskva, Kolos, 1964. 474 p. (MIRA 17:12)

DUNAY, S.

"Processing the by-products of aluminum production; also remarks by A. Nagy, P. Vajk, and I. Balint." (p.265) KOHASZATI LAPOK (Magyar Banyaszati és Kohászati Egyesület) Budapest. Vol 3, No 12.

SO: East European Accessions List, Vol 6, No 8, Aug 1954

DUNAY, S.

Sodium-pyrogenic processing of low-proportion bauxite. p. 41. KOHASZATI LAPOK.
(Magyar Banyassati es Kohassati Egyesulet) Budapest. Vol. 10, no. 1, Jan. 1955.

SOURCE: East European Accessions List (EEAL), Library of Congress
Vol. 5, no. 6, June 1956

SANDOR DUNAY

✓ The production of high-purity alumina hydrate in Bayer plants. Sándor Dunay, András Heltz, and József Gyere.
Értékelés a Magyar Kémiai Lapok 1956, 77-85.—A method was worked out for detg. the impurities during the enriching process of the hydrate, based on extractive enriching in a Soxhlet app. Only 80–100 g. alumina hydrate is necessary for the detn., and the method is of satisfactory accuracy. The method showed that the Y_2O_3 can be washed out entirely from the hydrate, the P_2O_5 , SiO_2 , and Na_2O in part, and the Fe_2O_3 and the TiO_2 not at all. The double rinsing used in alumina plants entirely removes the water-sol. impurities. The floating impurities (approx. 75–80% Fe_2O_3 , 12% SiO_2 , and 12% TiO_2) and dissolved Na_2FeO_4 can be filtered out by a granulated synthetic corundum filter with the addn. of some 3% H_2O_2 . Peliclas D. Goodman

DUNAY, S.

Investigation of the grain size of aluminum hydrate while mixing with air.
In German.

p. 409. (ACTA TECHNICA) Vol. 18, no. 3/4, 1957
Budapest, Hungary

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3,
March 1958

The stepwise mild digestion of Hungarian baylets...
under Dunay, Kemény, Katalin, József, Budapest, and
Hungary. Results follow: A summary of the
stepwise mild digestion as compared with
the method on the digestion of...
sediment, the properties of the resulting red dudge were
studied. The results stages were as follows:
The results obtained for the digestion
were compared with digestion results of a
mild digestion corresponding to the...
of 100°C. Digestions at a steady 172° and 204°...
were also carried out for comparison. Hungarian baylets
from Kiskesztogy, Halmi, and Nyírad were...
used. The results indicate that no improvements in...
dudge sedimentation properties result from using...

DUNAY, S.; KAKAS, J., dr.

The 75 year Sonnblick Observatory. Idojaras 65 no.5:315-316 S-O '61.

1. "Idojaras" szerkesztoje(for Kakas).

(Austria--Meteorological stations)

DUNAY, Sandor

"Descriptive meteorology" by Hurd C. Willett and Frederick Sanders.
Reviewed by Sandor Dunay. Idojaras 66 no.2:119 Mr-Apr '62.

DUNAY, Sander

"Climate of China" by Ch'ên Shên & sun. Reviewed by Sander Dunay.
Idojaras 66 no.2:118-119 Mr-Ap '62.

DUNAY, Sándor

Temperature investigation on the slopes of Mount Badacsony.
Orsz meteor int bees tud.kut 25:163-170 '61 (publ.'62).

DAVITAYA, F.F., akademik, prof., dr.; DUNAY, Sandor [translator]

Method for forecasting heat sums. Idojaras 67 no.3:138-148
My-Je '63.

1. Institut geografii im. Vakhushti Akademii nauk Gruzinskoy
SSR, Tbilisi (for Davitaya).

VIGVARI, Mihaly; BALAZS, Adam; DUNAY, Sandor

Calculating methods for the continuous countercurrent ion
exchange applied in the uranium industry. Magyar kem lap 20
no.2:96-100 F '65.

L 30757-66 FCC

ACC NR: AP6020268

SOURCE CODE: HU/0033/65/069/003/0175/0179

AUTHOR: Dunay, Sandor

ORG: none

TITLE: Approximation method for the determination of frequency distributions

SOURCE: Idojaras, v. 69, no. 3, 1965, 175-179

TOPIC TAGS: practical meteorology, approximation method, frequency distribution, meteorologic observation

ABSTRACT: A method was developed for the approximation of the frequency distribution of meteorological values provided that these values have a discrete character, can be refined for daily intervals, and are limited from both above and below. Tables were given for the values of meteorological properties at various areas in Hungary calculated by this technique and it was proven that the number of days during which the meteorological factors selected prevail can be calculated with a high degree of dependability. Orig. art. has: 5 formulas and 4 tables. [JPRS]

SUB CODE: 12, 04 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 001

Cord 1/1 JS

DUNAYAN, M.S., insh.

Conversion of 35 kv. lines to 110 kv. and construction of a
unit-type substation without circuit breakers on the feeding
side. Elek. sta. 30 no.3:88-89 Mr '59. (MIRA 12:5)
(Electric lines) (Electric substations)

GREYMAN, Aleksandr Abramovich, doktor med. nauk; DUNAYEV, A., red.

[Surgical treatment and pathomorphology of goiter; clinical morphological data for the White Russian S.S.R.] Khirurgi-cheskoe lechenie i patomorfologiya zoba; kliniko-morfologicheskie materialy po Belorusskoi SSR. Minsk, Izd-vo "Belarus", 1964. 134 p. (MIRA 17:6)

DUNAYEV, Aleksandr Dmitriyevich; GORYACHEV, Yu.

[Yartsevo Cotton Plant; a short historical essay] IAr-
tsevskii khlopchatobumazhnyi; kratkii istoricheskii
ocherk. Smolensk, Smolesnskoe knizhnoe izd-vo, 1963. 219 p.
(MIRA 18:1)

DUNAYEV, A.F., nauchnyy sotrudnik; SUVOROVA, Ye.V., nauchnyy sotrudnik;
SOLOVEYCHIK, A.I., nauchnyy sotrudnik; PODKOPAYEVA, G.M.,
nauchnyy sotrudnik.

Increasing the consultative role of the polyclinical department of a provincial hospital. Zdrav. Bel. 9 no.1:5-8 J'63.
(MIRA 16:8)

1. Iz Belorusskogo nauchno-issledovatel'skogo sanitarno-gigiyenicheskogo instituta (direktor P.V.Ostapenya)
(MINSK PROVINCE--HOSPITALS--OUTPATIENT SERVICES)

S/732/61/019/000/001/001
D207/D307

3.9/10

AUTHORS:

Guzeyev, V.T. and Dunayev, A.M.

TITLE:

Measurements of the magnetic field in the Pacific Ocean sector of the Antarctic

SOURCE:

Sovetskaya antarkticheskaya ekspeditsiya. Trudy. t. 19: Tret'ya morskaya ekspeditsiya na d/e 'Ob', 1957-1958 gg.; obshcheye opisaniye i nauchnyye rezultaty. Leningrad, Izd-vo 'Morskoy transport,' 1961, 224-237

TEXT:

Three methods of measuring the geomagnetic field components were used during the Third Sea Expedition (1957-58): the eight-bearing method, measurements on board with the ship 'Ob' following a steady course, and the outboard method. The eight-bearing method, based on B.A. Bologov's theory and developed by V.T. Guzeyev during the Second Sea Expedition, consisted of measuring the vertical (Z) and horizontal (H) components, by means of magnetically saturated sensors placed in the upper-bridge binnacle, while the ship sailed

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Measurements of the magnetic field ... S/732/61/019/000/001/001
D207/D307

along the eight sides of a small regular octagon. These measurements were carried out at 31 locations, beginning with $65^{\circ} 44' S$ $114^{\circ} 22' E$ on January 19, 1958, and the results were analyzed by a method due to B.A. Bologov. These measurements were supplemented by determination, with the same apparatus, while the ship followed a steady course: 121 such determinations of H and Z were made, beginning from the location at $65^{\circ} 04' S$ $116^{\circ} 00' E$ on January 20, 1958. In the outboard method a suitably sealed instrument was trailed astern at a distance (35-40 m) sufficient to avoid the magnetic effects of the ship's steel hull. With this instrument, developed by A.M. Dunayev using magnetically saturated sensors, measurements of Z and H were made at 6 locations (beginning at $65^{\circ} 44' S$ $114^{\circ} 22' E$, on January 18, 1958) and the instrument was then lost due to the attachment wire which snapped during bad weather. A second instrument was made on board and further outboard measurements (Z only) were carried out at 49 locations, ending at $55^{\circ} 15' S$ $64^{\circ} 50' W$ on June 13, 1958. Most of the locations were in meridians in the southern part of the Pacific. The accuracy of the outboard instrument was checked on land by comparing

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Measurements of the magnetic field ...

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D207/D307

its readings with those of a Z-balance; good agreement between the two sets of readings was obtained. At sea the bad weather reduced considerably the accuracy of the outboard measurements. There are 7 tables. [Abstracter's note: Pages 231-237 containing most of the tables are missing. Pagination taken from the list of contents]

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C

Card 3/3

^Y
DUNAIEV, A. N.

Novyi metod vysadki naruzhnykh utolshchenii na kotsakh trub.
(Vestn. Mash., 1951, no 3, p.50-54)

(New upsetting process for external reinforcements of pipe endings.)

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union,
Library of Congress, 1953.

DUMAYEV, A.N.; TYSHKOVSKIY, S.M.

Modernisation of an amplitude pickup. Stan.i instr. 33 no.7:40
J1 '62. (MIRA 15:7)

(Vibration—Measurement)

MISHUSTINA, Lidiya Ivanovna; DUNAYEV, A.S., red.; BORUNOV, N.I., tekhn.
red.

[Automatic adjustable A3100 air switches] Vozdushnye avtomaticheskie ustanovochnye vykliuchateli serii A3100. Moskva, Gos. energ. izd-vo, 1961. 31 p. (Biblioteka elektromontera, no.37)

(MIRA 14:9)

(Electric switchgear)

ACC NR: AP7005601

SOURCE CODE: UR/0413/67/000/002/0040/0040

INVENTOR: Dunayev, A. S.; Gipsman, I. K.; Katsin, V. M.; Chursin, D. G.; Volkov, L. G.

ORG: None

TITLE: A current density analyzer. Class 21, No. 190408

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 40

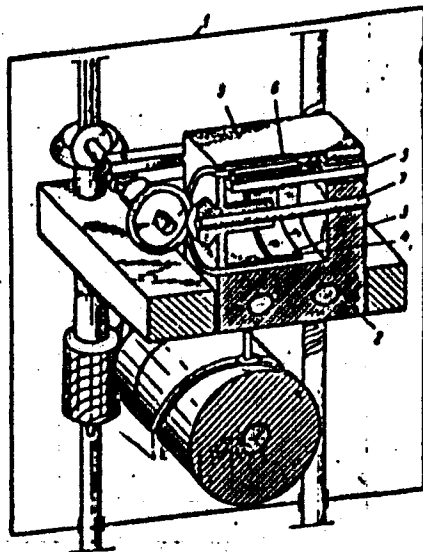
TOPIC TAGS: current density, electron beam, measuring instrument

ABSTRACT: This Author's Certificate introduces an instrument for analyzing the current density of an electron beam. The installation contains a vacuum chamber, a mechanical scanner with a helically slotted rotating drum, and a collector. For rapid and thorough analysis of electron-beam structure, the mechanical scanner is made in the form of a carriage with a rectangular slot which moves both lengthwise and crosswise with respect to the beam. The drum is located inside the carriage and the collector is placed within the drum along its axis under the rectangular slot.

Card 1/2

UDC: 621.397.331.1

ACC NR: AP7005601



1--vacuum chamber; 2--mechanical scanner; 3--rotating drum; 4--helical slot; 5--collector; 6--rectangular slot; 7--drum axle

SUB CODE: 14, 09/ SUBM DATE: 018ep64

Card 2/2

DUNAYEV, A.V., slesar'.
~~XXXXXXXXXXXXXXXXXXXX~~

Improvement of the plug for sampling oil. Energetik 4 no.8:28 Ag '56.
(Electric circuit breakers) (MIRA 9:10)

BIKIN, M. (Bikin, Khabarovskiy kray); DUMAYEV, A. (Mal'chik); IL'IN, V.;
PYANKOVSKIY, V. (Ufa); ROSLYAKOV, V.; PESIS, Z.; SOKOLOV, D.

Readers' letters. Posh.delo 5 no.12:30 D '59.
(MIRA 13:4)

1. Nachal'nik Otdeleniya posharnoy okhrany Gubinskogo
torfopredpriyatiya, Moskovskaya oblast'.
(Fire prevention) (Fire extinction)

DUNAYEV, B. A.

DUNAYEV, B. A. -- "The Orientation and Planning of the Residence House
(Methodology of Investigation)." Acad of Construction and Architecture
USSR. Moscow, 1955. (Dissertation for the Degree of Candidate of
Architectural Sciences.)

SO: Knizhnaya Letopis', No 5, Moscow, Feb 1956

DUNAYEV, B. A.

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PHASE I BOOK EXPLOITATION SOV/5729

Leningrad. Glavnaya geofizicheskaya observatoriya.

Soprosy prikladnoy klimatologii; sbornik statey (Problems in Applied Climatology; Collection of Articles) Leningrad, Gidrometeoizdat, 1960. 159 p. Errata slip inserted. 1,050 copies printed.

Sponsoring Agency: Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR. Glavnaya geofizicheskaya observatoriya im. A. I. Voyeykova.

Ed. (Title page): P. P. Davitay, Doctor of Agricultural Sciences; Ed.: L. P. Zhdanova; Tech. Ed.: N. V. Volkov.

PURPOSE : This publication is intended for applied climatologists and planners in climate-dependent industries.

COVERAGE: This collection of 18 articles contains reports originally presented at the Conference on Applied Climatology in Leningrad in October 1958. The purpose of the conference was to summarize the results of research done in the field of applied
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Problems in Applied Climatology (Cont.)

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climatology and to point the way for further investigations. Individual articles deal with general problems in applied climatology and special problems in engineering and industrial climatology, medical and health resort climatology, climatic energy resources, and marine climatology. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

Foreword

3

GENERAL PROBLEMS

Drozdov, O. A. [Glavnaya geofizicheskaya observatoriya im. A. I. Veyeykova -- Main Geophysical Observatory imeni A. I. Veyeykova]. Spatial and Temporal Climatic Characteristics Required to Serve the Needs of the National Economy

5

Sapozhnikova, S. A. [Nauchno-issledovatel'skiy institut aeroklimatologii -- Scientific Research Institute of Aeroclimatology] On Card 2/7

Problems in Applied Climatology (Cont.)	SOV/5729	3
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Klyukin, N. K. [Kolymaskoye upravleniye gidrometeorologicheskoy sluzhby -- Kolyma Administration of Hydrometeorological Service]. Some Problems in the Applied Climatology of Northeastern USSR		22
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Anapol'skaya, L. Ye., and L. S. Gandin [Main Geophysical Observatory imeni A. I. Voyeykov]. High-Velocity Wind Regime Over the USSR for Calculating Wind Loads on Structures		38
Tunayev, B. A. [Nauchno-issledovatel'skiy institut zhitishcha i stroitel'stva i arkhitektury SSSR-- Scientific Research Institute of Housing of the Academy of Construction and Architecture USSR]. On the Necessity of Expanding the Program of Solar Radiation Observations With Respect to Housing Construction Needs		52
Card 3/7		

DUNAYEV, B.A., kand.arkhitektury

Orientation of dwellings in districts of the Far South of the
U.S.S.R. Issl.po mikroklim.nasel.mest i zdan.i po stroi.fiz.
no.1:123-133 '62. (MIRA 15:9)
(Russia, Southern—Orientation (Architecture))

S/115/63/000/001/004/017
E194/E155

AUTHORS: Vigman, B.A., and Dunayev, B.B.

TITLE: Determination of the accuracy of tolerance gauges

PERIODICAL: Izmeritel'naya tekhnika, no.1, 1963, 11-14

TEXT: To make go-no-go gauges unnecessarily accurate involves expense, complication and loss of reliability. This article describes a semi-graphical probability method of determining the required gauge accuracy assuming normal distribution of product variation and gauge errors. It is shown that determination of the required accuracy of measurement consists in determining the ratio b/σ ($b = 3$ times standard deviation of error of measurement, and σ is the standard deviation of the product dimension from nominal). for one of the following conditions: a given risk to the manufacturer; a given risk to the purchaser; a given probability of an incorrect answer; and a given risk to the manufacturer when the gauge tolerance is reduced by a certain amount. Probability formulae are derived for each of these cases and are used to plot graphs of probability P against b/σ . The use of these graphs
Card 1/2

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Determination of the accuracy of ...

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is illustrated by numerical examples. The procedure is particularly recommended in designing go-no-go gauges on automatic equipment and it could be developed so as to determine for given values of product quality and tolerance symmetry the gauge accuracy which gives the lowest cost in automatic inspection operations. There are 4 figures. ✓

Card 2/2

DUNAYEV, B. K.

DUNAYEV, B. K.

Works of the Central Peat Experimental Station. (Min of Agri, RSFSR)

Volume V, 1939, 171 pages. "Methods of Studying Peat Bogs (Part I)

"Hydrogeological Work in the Study of Peat Bogs." by Dunayev, B. K.

SO: Botanicheskiy Zhurnal, Vol XXXV, No 1, pp 100-110,
Jan-Feb 1950, Russian bim per, Moscow/Leningrad (U-5511,
12 Feb 1954)

~~DUNAYEV, B. K.~~

DUNAYEV, B. K.

Works of the Central peat Experimental Station, (Min of Agri, RSFSR)

Volume 6, 1939, 319 pages. "Methods of Study of Peat Bogs (Part 2)

"Technical Specifications for Detailed Survey of Peat Deposits with an Area over 100 Hectares", (Compiled by B. G. Vasil'yev, P. D. Varlygin, N. V. Vlastova, B. K. Dunayev, A. S. Provorkin, M. I. Neyshadt, L. L. Il'inskiy, L. Ya. Lenin, M. I. Pavlov and A. N. Chel'tsov).

30: Botanicheskiy Zhurnal, Vol XXXV, No 1, pp 100-110,
Jan-Feb 1950, Russian bimonthly, Moscow/Leningrad (U-5511,
12 Feb 1954)

~~DUNAYEV~~, B.K.

DUNAYEV, B.K.; BELOKOPYTOV, I.Ye., redaktor.

[Geological and hydrogeological research in peat deposits] Geologicheskie i gidrogeologicheskie issledovaniia pri issledovanii torfiannykh mestorozhdenii. Moskva, Gos. energ. izd-vo, 1954. 84 p.
(Geology, Economic) (Peat) (MLRA 7:7)

PICHUGIN, Aleksey Vasil'yevich, dotsent; ~~PIMAYEV~~, Boris Konstantinovich,
inshener; ISAYEV, Aleksandr Nikolayevich, inshener; MITSKEVICH,
Konstantin Mikhaylovich, inshener; POSTNIKOV, Aleksandr Pavlovich,
inshener; IL'INSKIY, L.L., redaktor; SHABLINSKIY, V.V., redaktor;
IARICHOV, G.Ye., tekhnicheskiy redaktor

[Peat beds and prospecting for them] Torfianye mestorozhdeniya i ikh
razvedka. Izd. 2-oe, perer. Moskva, Gos. energ. izd-vo, 1956, 280 p.
(Peat) (MLRA 9:12)

DUNAYEV, B.K., inzhener.

Classification of peat deposits according to hydrogeological
conditions and drainage difficulties. Terr.prom. 34 no.2:27-30
'57. (MIRA 10:3)

1. Giproterrasvodka.
(Peat bogs) (Drainage)

DUNAYEV, B.K.

Hydrogeological operations in peat bogs. Razved. i okh. nedr 27
no.9:42-47 S '61. (MIRA 17:2)

1. Gosudarstvennyy proyektno-izyskatel'skiy i torforazvedochnyy in-
stitut.

DESYATNIKOV, O.O.; DUMAYEV, D.V.; YEVSEYEV, D.I.; IVANOV, I.N.;
MARKOV, G.S.; PARFANOVICH, B.V.; CHERNIN, V.N.; KHODYKO, A.D.

Concerning V.M. Chel'tsov and I.D. TSaregorodtsev's
article "Vacuum furnaces for the silicothermal method
of obtaining magnesium." TSvet. met. 35 no.7:92
Jl '62.

(MIRA 15:11)

(Magnesium--Metallurgy)

(Chel'tsov, V.M)

(TSaregorodtsev, I.D.)

DUNAYEV, Ernest Pavlovich; TOVMOSYAN, M.Ye., red.; RAKITIN, I.T.,
tekh. red.

[Development of democratization in industrial management during the
period of the building of communism] Razvitie demokratizma v
upravlenii proizvodstvom v period stroitel'stva kommunizma. Mo-
skva, Izd-vo "Znanie," 1962. 31 p. (Novoe v zhizni, nauke,
tekhnike. III Seriya: Ekonomika, no.6) (MIRA 15:5)
(Industrial management)

AGAYEVA, A.A.; DUNAYEV, F.F., professor, redakter; BOGUSLAVSKIY, V.,
redakter; WIRDEHAYAROV, A., tekhnicheskiy redakter.

[Resources of production for drilling oil wells and methods
of using them efficiently; practice of the Buzany drilling
bureau] Rezervy v protsesse soorusheniya neftnykh skvazhin
i puti ikh ratsional'nogo ispol'zovaniya; opyt buzevniyskoi
kventery buzeniya. Baku, Izd-vo Akademii nauk Azerbaidzhanskoi
SSR, 1955. 124 p. (MLA 9:4)
(Oil well drilling--Equipment and supplies)

DUNAYEV, F.F.

ZHIGACH, K.F., professor, redaktor; STEPANYANTS, A.K., professor, redaktor; TIKHOMIROV, A.A., kandidat ekonomicheskikh nauk, redaktor; KARAPETIAN, R.O., kandidat filosoficheskikh nauk, redaktor; CHIRNOZHUKOV, N.I., professor; YERSHOV, P.R., redaktor; GUREVICH, V.M., redaktor; MURAV'YEV, I.M., professor, redaktor; SHCHELKA-CHEN, V.N., professor, redaktor; CHARYGIN, M.M., professor, redaktor; DUNAYEV, F.F., professor, redaktor; KUZMAK, Ye.M., professor, redaktor; POLOSINA, A.S., tekhnicheskij redaktor.

[Ninth scientific and technological conference of 1954] Deviataya nauchno-tekhnicheskaya konferentsiya 1954. g. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry. 1955. 205 p. [Microfilm] (MLBA 8:9)

1. Moscow, Moskovskiy neftianoy institut. Nauchnoye studentcheskoye obshchestvo.

(Geology) (Petroleum)

DUNAYEV, F. F.

AID P - 2732

Subject : USSR/Mining
Card 1/2 Pub. 78 - 2/22
Authors : Krylov, A. P., Dunayev, F. F., Borisov, Yu. P. and
Buchin, A. N.
Title : Against the low-level discussion of questions relating
to the exploitation of oil deposits
Periodical : Neft. khoz., 33, 7, 4-18, J1 1955
Abstract : This is a sharp rebuke to M. V. Mkrtchyan for his
article "Questions relating to a planned exploitation
of oil deposits" published in this journal, No. 2,
1955 in which he criticized the present Soviet
petroleum industry and advocated a more planned oil
exploitation. The authors present a number of
formulae, tables and charts to prove that the
assertions of Mkrtchyan are completely wrong and
his method of analysis is unscientific.

AID P - 2732

Neft. khoz., 33, 7, 4-18, J1 1955

Card 2/2 Pub. 78 - 2/22

Institution : TsIMTNeft' (Central Scientific Research Institute
for the Mechanization and Organization of Labor in
the Petroleum Industry)

Submitted : No date

DUNAYEV, F.F.

ZHIGACH, K.F., professor, otvetstvennyy redaktor; MURAV'YEV, I.M., professor, redaktor; TIKHOMIROV, A.A., kandidat ekonomicheskikh nauk, redaktor; YEGOROV, V.I., kandidat ekonomicheskikh nauk, redaktor; CHARYGIN, M.M., professor, redaktor; DUNAYEV, F.F., professor, redaktor; NAMETKIN, N.S., dotsent, redaktor; BYTYUKOV, V.I., dotsent, redaktor; YEGOROV, A.F., dotsent, redaktor; CHARNYY, I.A., professor, redaktor; CHERNOZHUKOV, P.I., professor, redaktor; KUZMAK, Ye.M., professor, redaktor; DOKHNOV, V.N., professor, redaktor; PANCHENKOV, O.M., professor, redaktor; ALMAZOV, N.A., dotsent, redaktor; TAGIYEV, N.I., redaktor; GURNVICH, redaktor; ZHIGACH, K.F., redaktor; DAYEV, O.A., vedushchiy redaktor; GEMMAD'YEVA, I.M., tekhnicheskii redaktor

[The tenth scientific and technical conference, 1955] Desiataya nauchno-tekhnicheskaya konferentsiya, 1955 g. Leningrad, Gos. nauchno-tekhn. issledovaniya i gorno-toplivnoi lit-ry, Leningradskoe otdeleniye, 1956. 167 p. (MIRA 9:7)

1. Moscow. Moskovskiy neftyanoy institut. Nauchnoye studencheskoye obshchestvo
(Petroleum engineering) (Petroleum geology)

DUNAYEV, FEDOR FEDOROVICH

PHASE I BOOK EXPLOITATION

283

Dunayev, Fedor Fedorovich

Ekonomika i planirovaniye neftyanoy promyshlennosti SSSR (Economics and Planning of the Petroleum Industry in the USSR) Pt. 1. Moscow, Gostoytekhnizdat, 1957. 236 p. 4,500 copies printed.

Eds.: Brents, A. D., Candidate of Economic Sciences; Gal'peron, Ye. B., Engineer-Economist. Ed.-in-Charge: Dubrovina, N. D.; Tech. Ed.: Trofimov, A. V.

PURPOSE: The book is intended as a college text for students and faculty members. It is also meant to be used by economists in the Petroleum industry.

COVERAGE: The author explains the role played by the petroleum industry in the Soviet national economy, its development and distribution, the way it is organized and how it is directed. The author also describes the methods of production. There are 18 references, all of which are Soviet.

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Economics and Planning of the Petroleum Industry in the USSR (Cont.) 286

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AVAILABLE: Library of Congress

Card 5/5

KUZMAK, Ye.M., prof. doktor tekhn. nauk, red.; TARAN, V.D., prof., doktor tekhn. nauk, red.; ZHIGACH, K.F., prof., red.; MURAV'YEV, I.M., prof., red.; TIKHOMIROV, A.A., kand. ekon. nauk, red.; YEGOROV, V.I., kand. ekon. nauk, red.; CHARYGIN, M.M., prof., red.; DUNAYEV, P.F., prof., red.; CHERNOZHUKOV, E.I., prof., red.; CHARNY, I.A., prof., red.; PANCHENKOV, G.M., prof., red.; DAKHNOV, V.N., prof., prof., red.; HAMETKIN, N.S., doktor khim. nauk, red.; ALMAZOV, N.A., dots., VINOGRADOV, V.N., kand. tekhn. nauk, red.; BIRYUKOV, V.I., kand. tekhn. nauk, red.; TAGIYEV, E.I., red.; GUREVICH, V.M., red.; GOR'KOVA, A.A., ved. red.; FEDOTOVA, I.G., tekhn. red.

[Proceedings of the conference of technical schools on the problems of new equipment for the petroleum industry] Meshvuzovskoe soveshchanie po voprosam novoi tekhniki v neftiatoi promyshlennosti. 1958. materialy... Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry. Vol. 3. [Manufacture of petroleum industry equipment] Neftianoe mashinostroenie. 1958. 222 p. (MIRA 11:11)
(Petroleum industry--Equipment and supplies)

CHERNOSHIUKOV, N.I., prof., doktor tekhn.nauk, red.; ZHIGACH, K.F., prof.,
red.; MURAV'YEV, I.M., prof.,red.; TIKHOMIROV, A.A., kand.ekon.
nauk, red.; YEGOROV, V.I., kand.ekon.nauk, red.; CHARYGIN, M.M.,
prof., red.; DUMAYEV, P.F., prof., red.; KUZMAK, Ye.M., prof.,
red.; CHARNYY, I.A., prof., red.; PANCHENKOV, O.M., prof., red.;
DANKHNOV, V.N., prof., red.; NAMETKIN, N.S., doktor khim.nauk, red.;
ALMAZOV, N.A., dotsent, red.; VINOGRADOV, V.N., kand.tekhn.nauk, red.;
BIHYUKOV, V.I., kand.tekhn.nauk, red.; TAGIYEV, E.I., red.; GURNVICH,
V.M., red.; ZAMARAYEVA, K.M., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Petroleum refining; articles] Pererabotka nefiti; materialy. Moskva.
Gos.nauchno-tekhn.isd-vo nefi. i gorne-teplivnoi lit-ry. Vol.2. 1958.
289 p.
(NIRA 12:1)

1. Mashvuzovskoye soveshchaniye po voprosam novej tekhniki v neftyanoy
promyshlennosti, Moscow, 1956. 2. Moskovskiy neftyanoy institut (for:
Cherneshnikov, Panchenkov).
(Petroleum--Refining)

DUNAYEV, Fedor Fedorovich

Ekonomika i planirovaniye neftyanoy promyshlennosti
SSSR. Moskva, Gostekhnizdat, 1957-
v. graphs, tables.

CHERNOMOZHUKOV, N.I., prof., doktor tekhn.nauk, red.; ZHIGACH, K.F., prof.,
otvetstvennyy red.; MURAV'YEV, I.M., prof., red.; TIKHOMIROV, A.A.,
kand.ekon.nauk, red.; YEGOROV, V.I., kand.ekon.nauk, red.; CHARYGIN,
M.M., prof., red.; ~~DUMAYEV, E.E., prof., red.~~; KUZMAK, Ye.M., prof.,
red.; CHARNYY, I.A., prof., red.; PANCHENKOV, G.M., prof., red.;
DAKHNOV, V.N., prof., red.; NAMETKIN, N.S., doktor khim.nauk, red.;
ALMAZOV, N.A., dots., red.; VINOGRADOV, V.N., kand.tekhn.nauk, red.;
BIRYUKOV, V.I., kand.tekhn.nauk, red.; TAGIYEV, E.I., red.; GUREVICH,
V.M., red.; ZAMARAYEVA, K.M., vedushchiy red.; MUKHINA, E.A., tekhn.
red.

[Materials of the Interuniversity Conference on Problems of New
Practices in the Petroleum Industry] Materialy meshvuzovskogo
soveshchaniya po voprosam novoy tekhniki v neftyanoy promyshlen-
nosti. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi
lit-ry. Vol.2. [Petroleum refining] Pererabotka nefti. 1958. 289 p.
(MIRA 11:6)

1. Meshvuzovskoye soveshchaniye po voprosam novoy tekhniki v
neftyanoy promyshlennosti. 1956.
(Petroleum--Refining)

ZHIGACH, K.F., prof., red.; MURAV'YEV, I.M., prof., doktor tekhn.nauk, red.;
 TIKHOMIROV, A.A., kand.ekon.nauk, red.; YEMOROV, V.I., kand.ekon.
 nauk, red.; CHARTOIN, M.M., prof., red.; DUNAYEV, F.F., prof., red.;
 CHERNOZHUKOV, N.I., prof., red.; KUZMAK, Ye.M., prof., red.;
 CHARNYI, I.A., prof., red.; PANCHENKOV, G.M., prof., red.; DAKHNOV,
 V.N., prof., doktor geologg-mineralogicheskikh nauk, red.; NAMEDKIN,
 N.S., doktor khim.nauk, red.; ALMAZOV, N.A., dots., red.; VINOGRADOV,
 V.N., kand.tekhn.nauk, red.; BIRYUKOV, V.I., kand.tekhn.nauk, red.;
 TAGIYEV, N.I., red.; GURNEVICH, V.M., red.; DOBRYNINA, N.P., vedushchiy
 red.; MUKHINA, N.A., tekhn.red.

[Proceedings of an interschool conference on problems of new techniques
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 po voprosam novoy tekhniki v neftyanoy promyshlennosti. Moskva, Gos.
 nauchno-tekhn.isd-vo neft. i gorno-toplivnoi lit-ry. Vo.1.
 [Prospecting and exploitation of oil and gas fields] Razvedka i
 razrabotka neftyanykh i gazovykh mestorozhdenii. 1958. 311 p.

(MIRA 11:4)

1. Meshvuzovskoye soveshchaniye po voprosam novoy tekhniki v
 neftyanoy promyshlennosti.

(Petroleum engineering) (Gas, Natural--Geology)

AUTHOR:

Tagiyev, E. I.; ~~Dunayev, E. E.~~; Tomashpol'skiy, L. M.;
Sereda, N. G.; and Mordvin, L. N. SOV/93-58-8-5/15

TITLE:

Increased Efficiency Resulting From the Drilling of
Clusters of Multiple Oil Wells Through Level Type
Formations (K voprosu ob effektivnosti sploshnogo
razburivaniya mestorozhdeniy ravninnogo tipa kustami
mnogostvol'nykh skvazhin)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 8, pp. 16-23 (USSR)

ABSTRACT:

The All-Union conference on dual well drilling and
inclined well operation, called by the Gosplan of the
USSR, started in January and continued through
February 1958. The conference noted that the extension
of multiple well drilling in the Soviet Union is of
great importance since this type of well completion will
reduce capital investment and the consumption of metal and
labor. Slepyan, Milovidov, Shandin, Ovanesov, and
Mezhlumov, representing the Councils of the National
Economy of the Bashkir ASSR, Azerbaydzhan SSR, Kuybyshev
Oblast, and Stalingrad Oblast reported that they are

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Increased Efficiency Resulting (Cont.)

SOV/93-58-8-5/15

preparing for expansion of the multiple well drilling method in their respective regions. The authors state that the increased importance of multiple well drilling calls for a more thorough analysis of the problems raised by M. G. Osipov and A. A. Kortatstsi in their article published in Neftyanoye khozyaystvo, 1957, Nr 8. The authors also note that the effect of multiple well drilling through level type formations had been studied at the Moskovskiy neftyanoy institut im. akad. I. M. Gubkina (Moscow Petroleum Institute im. Acad. I. M. Gubkin) by V. P. Banatov, G. I. Zhukova, L. G. Kasatkina, and N. L. Kolyubakin under the guidance of E. I. Tagiyev and F. F. Dunayev. Drilling data provided by the 'Al'met'yevburneft' and Tatburneft' of the Tatar ASSR show that the multiple well drilling method produces better results than the vertical well drilling method (Tables 1-3). Fig. 1 presents a well distribution scheme for multiple well drilling at the Yuzhno-Romashkino oilfield of the Tatar ASSR. This scheme will be used for oil well drilling during the Sixth Five Year Plan. Tables 4-6 show that the drilling of multiple

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SOV/93-58-8-5/15

Increased Efficiency Resulting (Cont.)

wells according to this scheme of well distribution will lead to a reduction in capital investment and to a desirable decrease in time and labor consumption. The authors conclude that: 1) drilling clusters of dual wells through level type formations will reduce capital investment, labor and metal consumption, 2) the accumulated data on dual well drilling and on the operation of clusters of inclined wells a level type formations make it possible to recommend an expansion of this type of drilling, and 3) wide application of dual well drilling depends on the development of special drilling and operating equipment, and on the solution of individual technological problems. There are 6 tables and 1 figure.

1. Petroleum--Production
2. Well drilling--Costs

Card 3/3

ZHIGACH, K.F., prof., otv.red.; MURAV'YEV, I.M., prof., red.; TIKHOMIROV, A.A., kand.ekonom.nauk, red.; VINOGRADOV, V.M., kand.tekhn.nauk, red.; SIDORENKO, N.V., red.; BRENTS, A.D., red.; CHARYGIN, M.M., prof., red.; DUNAYEV, E.F., prof., red.; CHARNYY, I.A., prof., red.; CHERNOZHUKOV, N.I., prof., red.; KUZMAK, Ye.M., prof., red.; DAKHNOV, V.M., prof., red.; PANCHENKOV, G.M., prof., red.; MANOTKIN, N.S., prof., red.; TAGIYEV, N.I., prof., red.; BIRYUKOV, V.I., kand.tekhn.nauk, red.; YEGOROV, V.I., kand.tekhn.nauk, red.; ALMAZOV, N.A., dotsent, red.; GURNVICH, V.M., red.; ISAYEVA, V.V., vedushchiy red.; POLOSINA, A.S., tekhn.red.

[Development of the gas industry of the U.S.S.R.; from the proceedings of the Interuniversity Scientific Conference on the Problems of the Gas Industry] Meshvuzovskaya nauchnaya konferentsiya po voprosam gazovoi promyshlennosti. Razvitie gazovoi promyshlennosti SSSR; materialy. Moskva, Gos.nauchno-tekhn.isd-vo neft. i gornotoplivnoi lit-ry, 1960. 405 p. (MIRA 13:11)

1. Meshvuzovskaya nauchnaya konferentsiya po voprosam gazovoy promyshlennosti. 2. Glavgas SSSR (for Brents). 3. Moskovskiy institut neftekhimicheskoi i gazovoi promyshlennosti im. akad.Gubkina (for Charygin, Charnyy).

(Gas industry)

DUNAYEV, Fedor Fedorovich; MEKRASOV, M.M., prof., doktor ekonom.nauk,
retsensent; BRENTS, A.D., red.; GORKIN, S.F., red.; DUBROVINA,
M.D., vedushchiy red.; TROFIMOV, A.V., tekhn.red.

[Economics and planning of the petroleum industry in the U.S.S.R.]
Ekonomika i planirovanie neftianoi promyshlennosti SSSR. Moskva,
Gos.nauchno-tekhn.izd-vo nef. i gorno-toplivnoi lit-ry, 1961.
228 p. (MIRA 14:4)

(Petroleum industry)

DOBROVOL'SKIY, M.B.; DUNAYEV, F.P.; YEGOROV, V.I.

Comparative measurement of petroleum reserves of various categories.
Izv.vys.ucheb.zav.; neft' i gaz 5 no.12:107-110 '62.

(MIRA 17:4)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
imeni akademika Gubkina.

DUNAYEV, F.F.; KOZLOV, P.T.; DOBROVOL'SKIY, M.B.

Indices of the economic effectiveness of oil prospecting and means
for improving them. Izv.vys.ucheb. zav.;neft' i gas 5 no.5:
113-117 '62. (MIRA 16:5)

1. Moskovskiy institut neftekhimicheskoy i gasovoy promyshlennosti
imeni Akademika I.M.Gubkina.
(Petroleum geology)

DUNAYEV, Fedor F.

"Economic aspects of prospecting and development of oil fields in the USSR"

report to be submitted for the 6th World Petroleum Congress,
Frankfurt am Main, W. Germany, 19-26 Jun 63.

MATYUSHCHENKO, Roza Yefremovna; DUNAYEV, F.F., doktor ekon. nauk,
prof., red.

[Ways to increase labor productivity in the petroleum
refining industry; based on the example of the Turkmen S.S.R.]
Puti povysheniia proizvoditel'nosti truda v neftepererabaty-
vaiushchei promyshlennosti; na primere Turkmenskoi SSR. Ash-
khabad, Turkmenskoe izd-vo, 1964. 93 p. (MIRA 18:4)

DUNAYEV, F.; DOBROVOL'SKIY M.

Collection of works of the All-Union Petroleum Scientific Research
Institute for Geological Survey: "Economic Efficiency of Prospecting."
Geol. nefti i gaza 8 no.5:49-52 My '64. (MIRA 17:9)

DUNAYEV, F.F.

Most important problems in the development of petroleum
production. Trudy MINKHIGP no.49:64-71 '65.

(MIRA 18:8)

DUNAYEV, F.F.; DOBROVOL'SKIY, M.B.; YEGOROV, V.I.; PAVLINICH, E.A.

Economic efficiency of oil prospecting and some ways for
increasing it. Trudy MINKHIGP no.49:3-22 '65.

(MIRA 18:8)

CA DUNAYEV, F. N.

Magnetic texture arising in soft magnetic materials after thermomechanical treatment. Ya. S. Shur and F. N. Dunayev (Ural State Univ., U.S.S.R.). *Doklady Akad. Nauk S.S.R.* 72, 200-2 (1980).—An expl. study was made of the effect of cooling ferro-magnetic alloys from a high temp. while subjected to a single tensile stress, σ , kg./sq. mm. The texture developed by this thermomech. treatment was detd. by measuring permeability, μ , and magnetostriction, λ , while the specimen was subjected to a single tensile stress, σ kg./sq. mm. Specimens were narrow lamina 300 mm. long and 0.4 to 0.6 sq. mm. in area. Three and a half % Si steel cooled from 800° showed a max. μ for $\sigma = 1.0$ at $\sigma = 0$. With increasing σ , μ decreased continuously. For $\sigma = 0$, the value of μ at $\sigma = 1$ and then decreased with increasing σ up to $\sigma = 1$ and then decreased again. For $\sigma = 0$ the value of λ was pos. for fields up to 100 oersteds at $\sigma = 0.5$ or less. At $\sigma = 2$ or more λ was neg. With increasing σ , λ tended to be neg., and for $\sigma = 1$, λ was neg. at least in small fields at all values of σ . Similar results were obtained for 66-permalloy (66% Ni, 1% Mo) cooled from 800°, Cu-permalloy cooled from 700°, and permalloy (40% Fe, 40% Co, 2% V) cooled from 700°. Thermomech. treatment causes a preferred orientation of magnetization near the direction of stressing. If this treatment did not cause a change in sign of λ and serious distortion of the cryst. lattice, μ would increase with increasing σ . The change in sign of λ seemed decisive in the Si steel, but distortion played a role in the permalloys. Regardless of the Curie temp. value, thermomech. treatment produced a texture. The basic cause of the texture is residual oriented stresses. A. G. Guy

DURAKYEV, F. N.

USSR/Physics - Magnetic Materials, Treatment Nov/Dec 52

"Dependence of Effect of Thermomechanical Treatment of Soft Magnetic Materials on Magnitude of Loss and Temperature of Treatment," Ya. S. Shur, F. N. Durakov, Ural State U izvesti Gor'kiy

Is Ak Nauk SSSR, Ser Fiz, Vol 16, No 6, pp 640-646

Thermomechanical treatment of ferromagnetics, and of transformer steel (3.7% Si, remainder Fe) and 6% permalloy (65% Ni, remainder Fe) is studied. Results are plotted in curves, which show optimal temp for steel to be 600°C and for permalloy, 450°C.

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DUNAYEV, F.N.

SHUR, Ya.S.; DUNAYEV, F.N.

Magnetic texture formed in soft magnetic materials following
heat and mechanical treatment. Trudy Inst. fis. met. no.15:
29-41 '55. (MIRA 8:6)

(Magnetic materials)

AUTHOR: Dunayev, F. N. SOV/48-22-10-12/23
TITLE: the
About the Kinetics of Thermomechanical Treatment of
Ferromagnetics (O kinetike termomekhanicheskoy obrabotki
ferromagnetikov)
PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya,
1958, Vol 22, Nr 10, pp 1225 - 1230 (USSR)
ABSTRACT: Only a few data are already available on thermomechanical
treatment which has been considered in some papers
(Refs 1-12). In the present paper the author has
examined the kinetics of thermomechanical treatment of
65-Permalloy-samples (65% Ni, the rest Fe) and of
transformer steel (3,7% Si). It seems that besides
processes of diffusion there are also some other
processes in thermomechanical treatment. Possibly
strong local tensions are effected by external stresses.
Plastic deformations in microranges are produced
by that tension. Thus the fact is explained that the
activation energy ascertained for 65-Permalloy is
lower than that determined by thermomagnetic treatment
by Bozortsev and Dillinger (Ref 13) for the same material.

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the
About the Kinetics of/Thermomechanical Treatment of
Ferromagnetics

SOV/48-22-10-12/23

Additional tensions and distortions within the sample produced in thermomechanical treatment by external stresses, must really reduce the activation energy. The principal cause of the effect of thermomechanical treatment may be the ordered superstructure suggested by Neel (Ref 12). It is not impossible that the diffuse redistribution of internal stresses plays an important part in this phenomenon. In this redistribution the ranges are extended which are exposed to thermomechanical treatment in the direction of the stress applied. The cause of destruction of part of the magnetic texture during exposure time without stress at temperature T_A can be a spring-back, i.e. it can be the reason for the existence of an irreversible partial effect of thermomechanical treatment. There are 5 figures and 15 references, 12 of which are Soviet.

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About the Kinetics of Thermomechanical Treatment of
Ferromagnetics

SOV/48-22-10-12/23

ASSOCIATION: Kafedra eksperimental'noy fiziki Ural'skogo gos.
universiteta imeni A.M.Gor'kogo (Chair of Experimental
Physics of Ural State University imeni A.M.Gor'kiy)

Card 3/3

SOV/126- -7-5-7/25

AUTHOR: Dunayev, F. M.

TITLE: On the Stability of the Magnetic Texture Formed During
Thermo-Magnetic Treatment of Ferromagnets
(Ob ustoychivosti magnitnoy tekstury, vznikayushchey pri
termomekhanicheskoy obrabotke ferromagnetikov)

PERIODICAL: Fizika metallov i metallovedeniye, Vol 7, Nr 5, pp 677-684
(USSR)

ABSTRACT: It is known that, under the influence of uni-directional internal stresses at high temperatures, re-distribution and reorientation of the spontaneous magnetization vectors occurs in ferromagnets, which leads to an isotropy in magnetic properties; i.e. a magnetic texture forms. The latter persists on cooling to room temperature and on removing the stress, and is stable in relation to several other external influences. However, the degree of stability at high temperatures and under the action of various types of working is not known, nor is the role of loading in the various stages of thermo-mechanical treatment known. With the object of elucidating these questions the author carried

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On the Stability of the Magnetic Texture Formed During Thermo-Magnetic Treatment of Ferromagnets

out the following experiments. The specimens used were of hot rolled transformer steel (3.7% Si, remainder Fe) and 65-Permalloy (65% Ni, remainder Fe). The former were in the form of strips, 150 x 2 x 0.35 mm, and the latter in the form of wire, 150 mm long and 1 mm diameter. The specimens were given a preliminary refining by 3 hours annealing treatment in circulating hydrogen at 1200°C, followed by a 2 hours anneal in vacuum at 1000°C. Subsequently each specimen was annealed in vacuum at a temperature T_A at which it was then given thermo-mechanical treatment. This preliminary annealing at the temperature T_A was carried out in order to find and allow for the influence of the thermal treatment during the subsequent thermo-mechanical treatment processes. The thermo-mechanical treatment was carried out in vacuum, and differed from the preceding annealing at the temperature T_A only in that at this temperature a tensile load, σ_A , was applied for a definite period of time (20-100 minutes depending on T_A), after which the specimen was cooled under the same load. Cooling in all treatments

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On the Stability of the Magnetic Texture Formed During Thermo-Magnetic Treatment of Ferromagnets

was carried out at the rate of 300°C per hour. In order to expose and investigate the magnetic texture forming during thermo-mechanical treatment, the strong dependence of magnetization curves, coercive force and, particularly, magnetostriction on this magnetic texture was used. The degree of magnetization and the coercive force were measured by a vertical astatic magnetometer, and the magnetostriction was measured by an apparatus based on a mechanico-optical method. In order to see how the magnetic texture changes in the course of thermo-mechanical treatment or by the action of high temperature without application of load, the magnetostriction of saturation was measured at various temperatures by means of a special instrument in vacuum, as evolved by Dumayev (Ref.11). Fig.1 shows the dependence of coercive force H_c of transformer steel specimens on the magnitude of the load σ_A applied at various temperatures in the course of thermo-mechanical treatment. Fig.2 shows the dependence of the critical load on the temperature of thermo-mechanical treatment

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SOV/126-- -7-5-7/25

On the Stability of the Magnetic Texture Formed During Thermo-Magnetic Treatment of Ferromagnets

T_A for transformer steel and 65-Permalloy specimens. Fig.3 shows the change in the saturation magnetostriction of transformer steel under various conditions of heating, soaking at constant temperature ($T_A = 570^\circ\text{C}$ and $T = 670^\circ\text{C}$) and cooling. In Fig.4 similar measurements at $T_A = 660^\circ\text{C}$ are shown. Figs.5-7 show curves of the temperature dependence of the saturation magnetostriction of 65-Permalloy specimens, in cycles analogous to those carried out on transformer steel specimens, at $T_A = 460, 500$ and 540°C . From a comparison of the results obtained for transformer steel and 65-Permalloy it can be concluded that the stability of the magnetic texture formed during thermo-mechanical treatment differs fundamentally for different materials. There are 7 figures and 12 references, of which 10 are Soviet, 1 English and 1 Japanese.

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On the Stability of the Magnetic Texture Formed During Thermo-
Magnetic Treatment of Ferromagnets

ASSOCIATION: Ural'skiy gosudarstvennyy universitet imeni A. M. Gor'kogo
(Ural State University imeni A. M. Gor'kiy)

SUBMITTED: May 16, 1958

Card 5/5

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24.2200

S/139/61/000/004/009/023
E194/E135

AUTHOR: Dunayev, F.N.

TITLE: The temperature dependence of magnetostriction of transformer steel and 65-permalloy under mechanical load

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika.
no. 4, 1961, 79-82

TEXT: This work gives data on the temperature dependence of magnetostriction of multicrystalline transformer steel (3.7% Si, remainder Fe) and 65-Permalloy (65% Ni, remainder Fe). The transformer steel specimens were strips of 150 x 2 x 0.25 mm and the 65-Permalloy specimens wires 150 mm long and 0.8 mm in diameter. The samples were heat treated before use and the measurements were made under vacuum with the application of tensile loading. Change of length due to magnetostriction was measured by movement of a mirror. Temperature elongation was compensated by turning an adjusting screw. The specimen was heated in a furnace consisting of a quartz tube carrying a non-inductively wound platinum heating coil. This quartz tube was located inside a
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porcelain tube which in turn was located within the main vacuum tube holding the equipment. The porcelain tube was surrounded by copper foil to reflect heat and equalise the temperature. Loading was applied through a dynamometer consisting of a system of springs of different stiffnesses. For the measurement of each point the magnetic field was applied for only 4-5 seconds, so that even at high temperature there was no appreciable effect of thermal-magnetic working. The greatest magnetic field was 800 oe which was sufficient to produce saturation magnetostriction. The maximum error in measuring magnetostriction did not exceed 8% and the error in measuring temperature 5 °C. Fig.2 shows saturation magnetostriction as a function of temperature for transformer steel under various loads: Curve 1 - heating; curve 2 - cooling; curve 3 - load 0.15 kg/mm²; curve 4 - load 0.4 kg/mm²; curve 5 - load 1.7 kg/mm²; curve 6 - load 3.7 kg/mm². Fig.3 shows saturation magnetostriction as function of temperature for 65-Permalloy with various tensile loads: Curve 1 - heating; curve 2 - cooling; curve 3 - heating, load 0.5 kg/mm²; curve 4 - heating, load 1.4 kg/mm²;
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curve 5 - heating, load 2.1 kg/mm^2 . Each point on the curve is a mean of several measurements. Work by D.A. Shturkin (Ref.1: Izv. AN SSSR, ser. Fiz. Vol.11, 6, 661, 1947) on similar transformer steel has shown that, at room temperature, the magnetostriction constant $\lambda_{100} = +24 \times 10^{-6}$; it rises to a maximum at a temperature of 480°C , then falls. The magnetostriction constant λ_{111} is negative at all temperatures; at room temperature it is -3×10^{-6} and diminishes steadily as the temperature is raised. Comparing these results with the magnetostriction curves shown in Fig.2 indicates that the temperature dependence of saturation magnetostriction of transformer steel without external load is similar to the temperature dependence of the magnetostriction constant λ_{100} of this alloy. The constant λ_{111} being much smaller than λ_{100} , the latter predominates. It is considered that the application of load within the elastic limit displaces the 90° boundaries between regions of spontaneous magnetisation and forms a magnetic texture with neighbouring regions predominantly at 180° . If the loads are heavy enough there are practically no regions at 90° so that the

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process of magnetisation is governed by displacement of the 180° boundaries and rotation of the vectors of spontaneous magnetisation. However, 180° displacement does not cause magnetostriction and therefore, for heavy loads, magnetostriction is mainly due to the process of rotation. Consequently in this case the temperature dependence of saturation magnetostriction should be of similar character to that of the constant of magnetostriction λ_{111} . This is indeed observed in the case of transformer steel at a load of 3.7 kg/mm^2 . It is concluded that, in certain cases, study of the temperature dependence of saturation magnetostriction can give an idea of the nature of the temperature dependence of the magnetostriction constant. In particular, analysis of the curves given in Fig.2 leads to the conclusion that the magnetostriction constants of 65-Permalloy λ_{100} and λ_{111} fall steadily as the temperature is raised. There are 3 figures and 11 references: 7 Soviet-bloc and 4 non-Soviet-bloc. The two English language references read: Ref.4: Honda and Shimizu. Phil. Mag., Vol.4, 378, 1902. Ref.6: Kirkham, Phys. Rev., Vol.52, 1162, 1937.

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ASSOCIATION: Ural'skiy gosuniversitet imeni A.M. Gor'kogo
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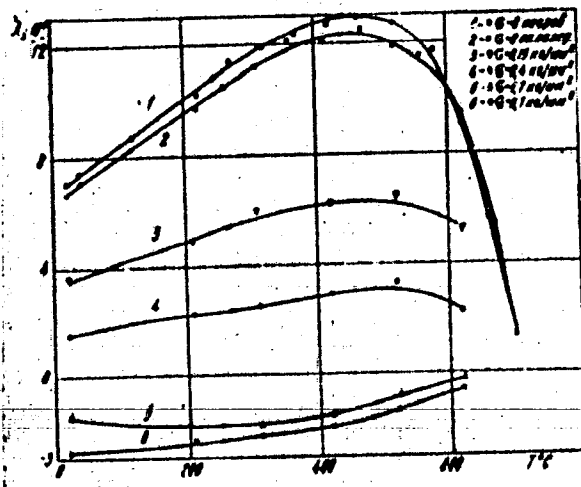


Fig. 2

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SUBMITTED: July 19, 1960

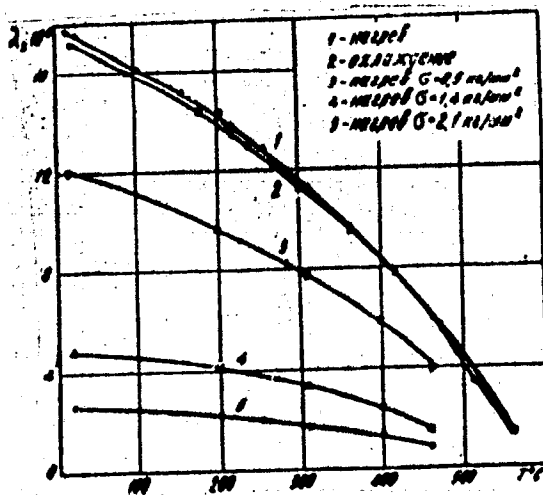


Fig.3

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AUTHORS: Dunayev, F.N., and Gulyayeva, G.P.

TITLE: The influence of elastic compression on the initial reversible magnetic susceptibility of ferro-magnetics

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.3, 1961, 44-48

TEXT: On the basis of Ye.I. Kondorskiy's theory, S.V. Vonsovskiy (Ref.2: ZhETF, Vol.17, 1094, 1947) developed a theory of initial reversible magnetic susceptibility which took account of weak magnetic fields as well as of elastic stresses, which also displace the domain boundaries. The theory has been checked in tests made with tensile stresses but hitherto compressive loads have not been tried, and this is the object of the present article. The experimental materials were chosen to cover a range of constants of magnetic anisotropy and of magnetostriction. The samples were mechanically worked and heat treated in various ways. The initial tests were made on work-hardened samples with high internal stresses. The work hardening was set up by rolling or forging. Then all samples were given
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No.1 annealing for 6 hours at 600 °C in a vacuum of 10^{-4} mm Hg and reinvestigated. All the samples were then given No.2 annealing, two hours at 900 °C in vacuum, and retested. Samples of 66-permalloy were also given annealing No.3 at 550 °C for 20 min, cooling at a rate of 100 °C/hour in a longitudinal magnetic field of 25 oersted, to set up a magnetic texture. Table 1 gives the composition of the materials investigated, the sample sizes and coercive force in various conditions. The magnetic permeability was measured by the ballistic method and the initial permeability was determined by extrapolating the permeability measured in weak fields to zero field. The maximum error of determination of permeability was about 6%. A special rig was devised to apply compressive stresses to the samples, most of the samples being covered with tubular guides to avoid bending. The error in determination of the stress was about 1%. The coercive force was determined to give a qualitative assessment of the influence of internal stresses after the various heat treatments. Curves of magnetic induction and magnetostriction were determined to find the character of the magnetic texture. The magnetostriction

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curves were determined by means of wire strain gauges. Fig. 2 shows curves of the initial permeability of transformer steel with 4.1% Si as function of the compressive loading in kg/mm². Curve 1 relates to the work hardened specimen, curve 2 after No. 1 annealing, and curve 3 after No. 2 annealing. It will be seen that the two annealings considerably relieve the internal stresses and increase the initial permeability. Similar curves were obtained for transformer steel containing 3.4% Si, for the dynamo steels and for the armco iron. Similar relationships are also obtained for the 66-permalloy which was not subject to thermal magnetic treatment except that the initial susceptibility of the work-hardened specimen was practically independent of the load. In the initial part of the curve for armco iron there is a clearly expressed maximum. These results are explained in terms of Vonsovskiy's theory: they correspond to the results that would be expected for materials with a positive magnetostriction constant λ_{100} and an axis of easy magnetisation of the type [100].

Fig. 4 shows the relationship between the initial permeability of electrolytic nickel and the compressive load. Curve 1 is for the Card 3175

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work hardened condition, curve 2 after No.1 annealing, and curve 3 after No.2 annealing; again the load is given in kg/mm². Nickel has negative magnetostriction and an axis of easy magnetisation of the type [111] and for this case Vonsvskiy's theory indicates the presence of a maximum in the curve of the initial permeability of the nickel as function of the compressive load, as is indeed observed. Curve 4 on Fig.4 was obtained on a specimen which had received No.2 annealing and was then slightly work hardened by bending, and it will be seen that this reduces the value of the initial permeability and displaces the maximum relative to curve 3 towards higher loads, as is predicted by Vonsvskiy's theory. It is concluded that the experimental data are in good qualitative agreement with Vonsvskiy's theory. Ya.S. Shur and D.D. Mishin are mentioned in the article for their contributions in this field.

There are 4 figures, 1 table and 9 references: 8 Soviet-bloc and the following English language reference:

Ref.5: E. Williams, Phys. Rev., Vol.52, 747, 1004, 1937.

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ASSOCIATION: Ural'skiy gosuniversitet imeni A.M. Gor'kogo
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SUBMITTED: July 19, 1960

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E073/E535

AUTHORS: Dunayev, F.N. and Kalinin, V.M.

TITLE: On the longitudinal and transverse magnetostriction
of electrical steel

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.4, 1961,
619-620

TEXT: Earlier investigations by V. V. Druzhinin et al.
(Ref.1: FMM, 1957, 5, 164; Ref.2: Zavodskaya laboratoriya, 1954,
2, 207) on iron-silicon alloys containing 0.4 to 7.0% Si, using
wire strain gauges which were not glued onto the specimens,
showed that in most cases the transverse magnetostriction as well
as the longitudinal magnetostriction had positive values. The
authors of this paper carried out experiments with glued on
strain gauges which yielded data differing from those obtained by
Druzhinin et al. The measurements were made on 250 x 30 mm²
strips and 30-45 mm diameter discs of various steels. To
eliminate the influence of possible bending on the measured
results, the strain gauges forming the arms of the measuring
bridge were glued on in pairs to both sides of the specimen. The

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sensitivity of the metering arrangement was about 10^{-7} mm^{-1} . Magnetization was by means of a solenoid. The main results on the longitudinal and transverse magnetostriction are entered in a table, where λ_{max} is the maximum magnetostriction on the $\lambda(H)$ curve and λ_{\parallel} is the magnetostriction in a magnetic field of 1200 Oe. It can be seen from the table that in the case of the hot-rolled steels $\Phi 11$ (E11), $\Phi 31$ (E31), $\Phi 42$ (E42) and the cold-rolled steel $\Phi 310$ (E310) the longitudinal magnetostriction λ_{\parallel} and the transverse magnetostriction λ_{\perp} have opposite signs. One of the possible causes why Druzhinin obtained positive values for λ_{\perp} is interaction of the strain gauge wire, along which there is a flow of d.c. current, with the magnetic fields of the electromagnet and the specimen. There are 1 table and 3 references: all Soviet.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet imeni
A. M. Gor'kogo (Ural State University imeni
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SUBMITTED: March 24, 1961

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